

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-19 (canceled).

20. (Currently Amended) ~~A method~~An automated method of measurement of proximity of a second contour correspondent to a template contour provided by a database containing templates of determined objected to be recognized to a first contour extracted from an image ~~for each point of the first contour~~, comprising the steps a first step of ~~associating each point of the first contour~~ with a point of the second contour determined as the closest, and a second step of pairing each point of the second contour with one or zero points ~~point~~ of the first contour if said one point of the first contour exists, by determining the point of the first contour which is closest from among the set of points of the first contour ~~that are associated with said point of the second contour~~ in said first step.

21. (Previously Presented) The method as claimed in claim 20, wherein the determination of a point that is closest to a given point is based on a true or discrete measure of the Euclidean distance between the two points.

22. (Previously Presented) The method as claimed in claim 21, comprising a step of allocating a measure of proximity $\text{Dist}(M_i)$ of each point M_i of the second contour to the first contour, based on the measurement of the distance from this point to the point of the first contour with which it is paired.

23. (Currently Amended) The method as claimed in claim 22, wherein said distance measure between two points of a pair is a measure corrected as a function of the difference of class of orientation of the points of the pair considered.

24. (Previously Presented) The method as claimed in claim 20, wherein in the step of associating zero or one points of the second contour with each point of the first contour, the point that is closest from among the points of the second contour which have the same class of orientation as said point of the first contour is associated.

25. (Previously Presented) The method as claimed in claim 20, wherein the associating step uses a chamfer map of the second contour via which, at each point of the first contour with coordinates x and y applied as input, said map provides as output an identification of the point of the associated second contour and a measure of the proximity between the two points thus associated.

26. (Previously Presented) The method as claimed in claim 25, wherein with the second contour is associated a chamfer map per class of orientation, and for each point of the first contour, the associating step comprises a step of determining the class of the point of the first contour, so as to apply the coordinates (x,y) of this point as inputs to the chamfer map corresponding to said orientation class.

27. (Previously Presented) The method as claimed in claim 25, comprising eight orientation classes wherein the associating step uses a chamfer map of the second contour via which, at each point of the first contour with coordinates x and y applied as input, said map provides as output an identification of the point of the associated second contour and a measure of the proximity between the two points thus associated; and

the second contour is associated a chamfer map per class of orientation, and for each point of the first contour, the associating step comprises a step of determining the

class of the point of the first contour, so as to apply the coordinates (x,y) of this point as inputs to the chamfer map corresponding to said orientation class.

28. (Previously Presented) A method of automatic identification of targets in an image of extracted contours which is defined by an image contour, in which a method of measurement of proximity according to claim 20 is applied, by applying as second contour, a template contour and as first contour, said image contour, so as to obtain the measure of proximity of each point of said template contour to said image contour.

29. (Previously Presented) The method of identification as claimed in claim 28, comprising the allocation of a local score of proximity $N(M_i)$ to each point M_i of the template contour as a function of a measure of proximity of this point, according to the following criteria:

- $N(M_i)$ has a value lying between 0 and 1.
- $N(M_i) = 0$, when said point is paired with zero points of the first contour;
- $N(M_i) = 1$, when the proximity measure is equal to zero;
- $N(M_i)$ has a value of about 1 when the proximity measure lies between 0 and 1 pixels.

- $N(M_i)$ decreases very rapidly to 0 as soon as the proximity measure becomes greater than 1 pixel.

- $N(M_i)$ decreases according to a curve having a point of inflexion, in the neighborhood of a proximity measure of about 2 pixels.

- $N(M_i)$ has a quasi-zero value as soon as the proximity measure becomes greater than 3 pixels.

30. (Previously Presented) The method of identification as claimed in claim 28, wherein the function for allocating the score of proximity to the point M_i may be written:

$$N(M_i) = \left(0.5 - \arctan \frac{4(\text{Dist}(M_i) - 2)}{\pi} \right) \frac{1}{0.9604}.$$

31. (Previously Presented) The method of identification as claimed in claim 30, comprising a step of measuring a global score η equal to the mean of the proximity scores relative to the number of points of the template contours.

32. (Previously Presented) The method of identification as claimed in claim 28, applied successively to each of the template contours of a collection of template contours.

33. (Previously Presented) The method of identification as claimed in claim 32, wherein said collection is obtained from another method of identification of targets, such a method using a Hausdorff distance measure.

34. (Previously Presented) The method of identification as claimed in claim 33, comprising a step of selecting hypotheses by comparison with a threshold of each of the global scores η allocated to each of the template contours.

35. (Previously Presented) The method of identification as claimed in claim 34, wherein said threshold is fixed at 0.6.

36. (Previously Presented) The method of identification as claimed in claim 35, comprising a step of discriminating between hypotheses of template contours which are superimposed, comprising for each pair of a first contour hypothesis and of a second contour hypothesis which are superimposed, a step of weighting the global score allocated to each of the template contours, said weighting step comprising the application of the method of measurement of proximity wherein:

by applying as second contour, the contour of said first hypothesis and as first contour, the contour of said second hypothesis, said proximity measure obtained for each point of contour of the first hypothesis being applied as weighting factor for the local score of proximity of this point to the image contour, and by deducing the global

score associated with the first contour hypothesis representing its proximity to the image contour by calculating the mean of said weighted local scores,

by applying as second contour, the contour of said second hypothesis and as first contour, the contour of said first hypothesis, said proximity measure obtained for each point of contour of the first hypothesis being applied as weighting factor for the local score of proximity of this point to the image contour and by deducing the global score associated with the first contour hypothesis representing its proximity to the image contour by calculating the mean of said weighted local scores; and

a step of allocating a measure of proximity $\text{Dist}(M_i)$ of each point M_i of the second contour to the first contour, based on the measurement of the distance from this point to the point of the first contour with which it is paired.

37. (Previously Presented) The method of identification as claimed in claim 36, wherein an hypothesis is adopted as best hypothesis of template contour, from among a plurality of hypotheses which are superimposed, that with which the best global score is associated.

38. (Currently Amended) A system for the automatic identification of an object in an image contour extracted from an image~~an image of contours~~, comprising

means for determining a measure of proximity between said image contour and each template of a database collection of templates of determined objects to be recognized.

said means comprising automated calculation means for calculating a measure of proximity of each point of a model contour corresponding to a selected template to said image contour.

said calculation means being configured to apply

a step of association of each point of said model contour with a point of said image contour determined as the closest, and

a step of pairing each point of the image contour with one point of the model contour if said one point of the model contour exists, by determining the

point of the image contour which is the closes from among the set of points of the image contour associated with said point of the model contour.

~~containing templates of determined objects to be recognized, and means of calculation, said means of calculation being configured so as to compare contours, wherein said means of calculation are configured so as to perform the steps of a method of identification as claimed in claim 28.~~